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ADDITIONS TO THE APSHERON FLORA

©Mirzayeva Sh., *Institute of Botany Azerbaijan National Academy of Sciences, Baku, Azerbaijan, shehla.mirzeyeva@mail.ru*

ДОПОЛНЕНИЯ К ФЛОРЕ АПШЕРОНА

©Мирзоева Ш. Н., *Институт ботаники НАН Азербайджана, г. Баку, Азербайджан, shehla.mirzeyeva@mail.ru*

Abstract. The article provides additional information on the species composition of the flora of the Apsheron Peninsula. The landscape of the peninsula is divided into two unequal parts, which differ orographically. Most of it is represented by the foothills and is located to the west of the peninsula, and a small eastern part is a flat semi-desert — the maximum height is 34 m. Covers natural and artificial ecosystems (semi-desert, middle and low mountain ranges, mud volcanoes, sand dunes and hills, arable lands, settlements). The synanthropic flora was formed here under the influence of anthropogenic factors, and its further adventization is underway. The article includes information about 14 herbarium species, previously common in Apsheron, but not included in the list of flora due to lack of information, and the range and general characteristics of 1 new species. Thus, the number of species distributed on the peninsula reaches 692, which are combined into 385 genera.

Аннотация. В статье приводятся дополнительные данные о видовом составе флоры Апшеронского полуострова. Ландшафт полуострова делится на две неравные части, отличающиеся рельефом. Большая часть представлена предгорьями и находится на западе полуострова, меньшая — восточная, равнинная полупустынная — имеет максимальную высоту 34 м. Включает естественные и искусственные экосистемы (полупустыня, средние и низкие горы, грязевые вулканы, песчаные гряды, узлы и песчаные холмы, посевные площади, населенные пункты). Здесь благодаря воздействию антропогенного фактора сформирована синантропная флора, и в настоящее время происходят процессы дальнейшей ее адвентизации. В статью включены сведения о 14 гербарных видах, ранее распространенных на Апшероне, но не вошедших в список флоры из-за отсутствия информации, ареал и общая характеристика 1 нового вида. Таким образом, число видов, распространенных на полуострове, достигает 692, которые объединяются в 385 родов.

Keywords: Apsheron, *Lotus*, *Atriplex*, *Chenopodium*, *Suaeda*, *Bolboschoenus*, *Onobrychis*.

Ключевые слова: Апшерон, *Lotus*, *Atriplex*, *Chenopodium*, *Suaeda*, *Bolboschoenus*, *Onobrychis*.

Introduction

The boundaries of the Apsheron Peninsula are accepted by us as well as in the book by I. I. Karyagin (1952): the western border runs along the meridian from the lower reaches of the river [2].

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Sumgait-chai (in the north) to Mount Kergez (in the south); from the northeast, east and southeast along the coast of the Caspian Sea; in the south-west, including the foothills of Gobustan, the border passes to the west of the Ag-Burun and Ilkhi-Dag mountains.

The territory of the Apsheron Peninsula has undergone a serious anthropogenic transformation over the past decades. This is due to large-scale technogenic transformations of ecotopes during the development of oil fields and intensive construction of residential areas and objects of technical and social infrastructure. This load calls into question the existence of many native stenotopic species. At the same time, fundamentally new habitats and conditions for biological invasions and expansions are emerging. For many such reasons, the study of the dynamics plant cover of the peninsula is very interesting and important. Thus, at the time of these changes, a detailed study of the flora of the area was not conducted.

Research Methods

The study of the flora of Apsheron was carried out by the route method, in combination with the method of random samples. The higher diversity and contrast of ecotopes in the mountains (compared to the plains) determine an increased spatial diversity of flora, including a faster spatial change in contrasting floristic situations. But frequent changes in ecotopes, a variety of natural obstacles, a mosaic of vegetation, and a diversity of phytocenoses, any study of the flora of mountain areas cannot be carried out except by a combination of these methods [9].

Hence the greatest justification for a continuous (rather than selective) detailed examination of the flora of individual ranges and mountain nodes. For sufficient completeness of flora identification, all lithological differences were examined. The route in our understanding is the trajectory of movement, in the ideal case, it is a landscape section, on which all the species encountered are identified. The length of each route was about 4–8 km.

The advantages of this method are:

1. the exact habitats of rare species have been obtained and reflected;

2. routes are immediately identified where a relatively large number of species in general or a large number of rare plant species are recorded, for example, key botanical areas;

3. it becomes possible to compile a detailed description of the ecological confinement of the species in the local area under study, to identify its characteristic habitats, and to reflect the specifics of this particular area;

4. the distribution of species over the territory is traced, it becomes possible to bind to a certain area and compare with historical, geographical, geological, etc.

The most important and noticeable stage in the knowledge of the species diversity of plants of the Apsheron Peninsula was the publication by the remarkable florist I. I. Karyagin (1952) “Flora of Apsheron” [2].

For more than 70 years, this article has been the only guide to the flora of the region. Over such an impressive time period, a wealth of factual material has accumulated, significantly correcting our knowledge of the territory under discussion. According to our assessment, based on our own field research, the data of their previously published reports [2, 6] and the materials of the Herbariums of the Institute of Botany of Azerbaijan National Academy of Sciences (BAK) and the Komarov Botanical Institute of the Russian Academy of Sciences named after V. L. Komarov (LE), 677 species belonging to 383 genera and 83 families were registered on the territory of the Apsheron Peninsula [3, 7, 10, 11].

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Research Results and Discussion

However, soon after the release of the checklist [10], after a thorough check of the Herbarium Fund of the Institute of Botany of Azerbaijan NAS, another 15 species from 4 families: Fabaceae (6), Chenopodiaceae (7), Cyperaceae (1) and Caryophyllaceae (1), 9 genera were found: 1 species *Lotus*, 1 species *Eversmannia,* 3 species *Onobrychis,* 1 species *Trifolium*, 1 species *Atriplex,* 1 species *Chenopodium,* 5 species *Suaeda*, 1 species *Bolboschoenus* and 1 species *Silene*. These species have either not been previously recorded for the flora of Apsheron, or their indication for the territory was not confirmed by actual finds. All cited herbarium specimens are stored in the Herbarium of the Institute of Botany of Azerbaijan National Academy of Sciences (BAK).

1. *Lotus tenuis* Waldst. & Kit. ex Willd. — (incl. *L. elisabethae* Opperman ex Wissjul.) — (BAK) Apsheron Peninsula, env. Baku city, in the boulevard, on the lawns. N 40°23′43″. E 49°52′56″. 15 August 2021. Sh. N. Mirzayeva!! Although this species was indicated for Absheron in "Flora of Azerbaijan" (1954), the indication was not confirmed by herbarium material [1]. Now the finding is confirmed in synanthropic habitats.

2. *Chenopodium rubrum* L. — (BAK) Absheron Peninsula, env. Khojasan villages. Salt meadow on the western shore of Lake Hadji-Hasan. 1 August 2014. A. S. Zernov, Sh. N. Mirzayeva. Most likely, the species is of adventitious origin in Apsheron. In the checklist [10, 11], we accidentally omitted this species.

3. *Suaeda arcuata* Bunge — (BAK) Gobustan massif, on the right side of the Sangachal-Alat highway, 10.09.2004. Gadzhiev, F. Movsumova! This and all species of Chenopodiaceae listed below were cited in the works of F. G. Movsumova [4, 5]. At the time of compiling the checklist [10, 11], this sample was unknown to us.

4. *S. crassifolia* Pall. — (BAK) Absheron Peninsula, near the village of Nardaran, on the shores of the Caspian Sea, in a salt marsh. 09.19.2004. V. Hajiyev, F. Movsumova! At the time of compiling the checklist [10, 11], this specimen was unknown to us.

5. *S. maritima* (L.) Dumort. — (BAK) In salt marshes around Baku, at "Qurd qapisi". 21.06.2006. V. Hajiyev, F. Movsumova! At the time of compiling the checklist [10, 11], this specimen was unknown to us.

6. *S. salsa* (L.) Pall. — (BAK) Absheron, station, old abandoned garden, sandy (wet). 24.10.1951. F. G. Mosumova; distr. Baku, pr. Baku, Zych, in lacum salsum. ??.10.1938 I. I. Karjagin! At the time of compiling the checklist [10, 11], this specimen was unknown to us.

7. *S. physophora* Pall. — (BAK) Absheron Peninsula, near the village of Zabrat-2, in the vicinity of the Salt Lake. 14.05.2004. V. Hajiyev, F. Movsumova. At the time of compiling the checklist [10, 11], this specimen was unknown to us.

8. *Atriplex rosea* L. — (BAK) It was found as a weed on the roadside around the Botanical Garden on the Absheron Peninsula in Baku. 20.09.2006. F. Movsumova! At the time of compiling the checklist [10, 11], this specimen was unknown to us.

9. *Bolboschoenus glaucus* (Lam.) S. G. Smith. — (BAK) prov. Baku, distr. Baku inter p. Perekesh-kjul et pasc. Agridza. 09.06.1928. M. Sachokia, A. A. Grossheim, (ident. I. Tatanov). At the time of compiling the checklist [10, 11], this specimen was unknown to us.

10. *Eversmannia subspinosa* (DC.) B. Fedtsch. — (BAK) pen. Absheron, distr. Baku, prope Schubanj. In siccis. 28.05.1940. C. Gurvitsch, A. Grossheim!; Baku, prope Baku (Schubanj), in declivibus orientalibus arenosis vallis Yassamal. 02.06.1940. I. I. Karjagin!; pen. Apsheron, pr. Baku in Schubanj, in declivibus lapidosis arenosis. 02.06.1940. I. I. Karjagin!; pen. Absheron, prope Baku, Schubanj, in declivibus arenosis vallis Yassamal. 27.06.1940. C. Gurvitsch, A. A. Grossheim! At the time of compiling the checklist [10, 11], this specimen was unknown to us.

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11. *Onobrychis bobrovii* Grossh. — (BAK) On the way from Pirakeshkul to the military training ground. 04.19.2013. V. N. Karimov! At the time of compiling the checklist [10, 11], this specimen was unknown to us [12].

12. *O. transcaucasica* Grossh. — (BAK) peninsula Absheron, pr. p. Schouljany, in agro exp erimentali, 07.05.1930. Studiosi et I. I. Karjagin! At the time of compiling the checklist [10, 11], this specimen was unknown to us.

13. *O. bakuensis* Ranjbar — (Holmberg 394, W). prov et distr. Baku, loc. Baku. 04-17.05.1912. Otto R. Holmberg, Massoud Ranjbar! ! At the time of compiling the checklist [10, 11], this specimen was unknown to us.

14. *Trifolium spumosum* L. — (BAK) Zagulba, on the seashore. On rocky slopes. 1942. A. A. Grossheim! At the time of compiling the checklist [10, 11], this specimen was unknown to us.

15. *Silene chlorifolia* Sm. — (BAK) peninsula Absheron, parte boreo-occidentali, ad radices m-tis Ilkhi-dagh, in alveo parvo exsiccato. 19.05.1939. I. I. Karjagin!; prov. Baku, distr. Shemacha inter p. Perekesh-kjul et pasc. agridzha. 09.06.1928. M. Sachokia. M. Schischkin! At the time of compiling the checklist [10, 11], this specimen was unknown to us.

The information given by us about the finds of species and localities supplements the ideas about the flora of the Apsheron Peninsula. The natural conditions of the peninsula turned out to be acceptable for the existence of the plants mentioned above. When the checklist was written, we noted that no information was found about 206 species. However, as a result of recent research, we have found information about 6 of them. Thus, their number has dropped to 200. Of the species we included in the list, apparently, 7 species have disappeared. We also consider *Eversmannia subspinosa* (DC.) B. Fedtsch., *Bolboschoenus glaucus* (Lam.) S. G. Smith., *Suaeda salsa* (L.) Pall., *Trifolium spumosum* L., *Silene chlorifolia* Sm**.** to have disappeared from the territory of Apsheron. During the re-search of the herbarium fund, we found several copies of this species. Thus, the number of lost species has decreased from 7 to 2.

Thus, according to our latest data, the list of flora of the Apsheron Peninsula is 692 species, and the number of genera is 385.

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